

AUSTRALIAN PATENT OFFICE

WRITTEN OPINION

Applicant's or agent's file reference LPN/ACL/K.2005009438		Date of mailing <i>day/month/year</i> - 7 NOV 2006	
Application No. SG 200506412-6		Application Filing Date (<i>day/month/year</i>) 29 March 2004	Priority Date (<i>day/month/year</i>) 10 April 2003
International Patent Classification (IPC) (as indicated in the search report) Int. Cl. G03F 7/20 (2006.01) Action Date: 01 November 2006			
Applicant NIKON CORPORATION (JP)			

1. This First written opinion consists of a total of 6 sheets.
2. This opinion contains indications relating to the following items:

I	<input checked="" type="checkbox"/> Basis of the opinion
II	<input checked="" type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
III	<input checked="" type="checkbox"/> Lack of unity of invention
IV	<input checked="" type="checkbox"/> Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
V	<input type="checkbox"/> Certain documents cited
VI	<input type="checkbox"/> Certain defects in the application
VII	<input checked="" type="checkbox"/> Certain observations on the application
3. This opinion is based upon the assumption that the priority claim is valid.
4. The search report used was issued by the Australian Patent Office, and the date of completion is: 1 November 2006
5. If no reply is filed, the examination report will be established on the basis of this opinion.
6. The date by which the examination report will be established is: 10 July 2007

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I. Basis of the opinion

1. This opinion has been drawn on the basis of:

- ☒ the application as originally filed.
- ☐ the description, pages , as originally filed,
pages , filed with the request,
pages , received on with the letter of
- ☐ the claims, pages , as originally filed,
pages , filed with the request,
pages , received on with the letter of
- ☐ the drawings, sheets/fig. , as originally filed,
sheets/fig. , filed with the request,
sheets/fig. , received on with the letter of
- ☐ the sequence listing part of the description:
pages , as originally filed
pages , filed with the demand
pages , received on with the letter of

2. The amendments have resulted in the cancellation of: pages:
sheets of drawings/figures No :

3 ☐ This opinion has been established as if (some of) the amendments had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box.

4. Additional observations, if necessary:

II. Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non-obvious), or to be industrially applicable have not been and will not be examined in respect of:

- ☐ the entire application,
- ☒ claims Nos: 28-36, 49-88

because:

- ☐ the said application, or the said claim Nos. relate to the following non-patentable subject matter (section 13(3)) which does not require an examination (*specify*):

- ☐ the description, claims or drawings (*indicate particular elements below*) or said claims Nos are so unclear that no meaningful opinion could be formed (*specify*):

- ☐ the claims, or said claims Nos are so inadequately supported by the description that no meaningful opinion could be formed.

- ☒ no search report has been established for said claim Nos. 28-36, 49-88

III. Lack of unity of invention

1. This Office found multiple invention in this application, as follows:

This International Application does not comply with the requirements of unity of invention because it does not relate to one invention or to a group of inventions so linked as to form a single general inventive concept.

In assessing whether there is more than one invention claimed, I have given consideration to those features which can be considered to potentially distinguish the claimed combination of features from the prior art. Where different claims have different distinguishing features they define different inventions.

This International Searching Authority has found that there are different inventions as follows:

1. Claims 1-27 and 37-48 are directed to an environmental system comprising a fluid barrier, an immersion fluid system that delivers and collects immersion fluid, and a bearing fluid source to support the fluid barrier.
2. Claims 28-36 and 49-63 are directed to an environmental system comprising a fluid barrier, an immersion fluid system that delivers immersion fluid, and a device stage including a stage surface that is in the same plane as a device exposed surface.
3. Claims 64-88 are directed to a lithographic projection apparatus comprising a liquid confinement structure, and a gas seal.

The only feature common to all of the claims is a fluid barrier (or a liquid confinement structure as defined in claim 64). However, this feature is known in the art. See for example, a fluid barrier 2 in US 4509852. This means that the common feature can not constitute a special technical feature, since it makes no contribution over the prior art.

Because the common feature does not satisfy the requirement for being a special technical feature it follows that it cannot provide the necessary technical relationship between the identified inventions. Therefore the claims do not satisfy the requirement of unity of invention *a posteriori*.

2. Consequently, the following parts of the application were the subject of examination in establishing this report:

- ☐ all parts.
- ☒ the parts relating to claims Nos. 1-27, 37-48

IV. Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims 4-12, 14, 16-27, 39, 40, 43-48	YES
	Claims 1-3, 13, 15, 37, 38, 41, 42	NO
Inventive step (IS)	Claims 4-12, 14, 16-27, 39, 40, 43-48	YES
	Claims 1-3, 13, 15, 37, 38, 41, 42	NO
Industrial applicability (IA)	Claims 1-27, 37-48	YES
	Claims	NO

2. Citations and explanations

The following documents cited in the Search Report have been considered as relevant for the purpose of this opinion:

D1: US 4509852 A (TABARELLI et al.)

D2: JP 63-157419 A (TOSHIBA CORP)

NOVELTY (N) AND INVENTIVE STEP (IS) claims 1-3, 13, 15, 37, 38, 41, 42

D1, see abstract; column 6 lines 28-42; and Figs. 3-4, discloses a lithographic projection apparatus having an environmental system for controlling an environment in a gap between an optical assembly (3) and a device (8) being retained by a device stage (1), the environmental system comprising: a fluid barrier (2) that is positioned near the device; and an immersion fluid system (see Fig. 4) that delivers an immersion fluid (through inlet 4) that fills the gap, and that collects immersion fluid (through outlet 5) that is directly between the fluid barrier and the device. This has disclosed all of the features of claims 1, 13, 15, 37, 38, 41 and 42. Furthermore, it is inherent that pump (10) would provide for a low pressure to discharge liquid (6), therefore claim 3 is also not novel in light of D1.

Similarly, D2 (see abstract), discloses a lithographic exposure apparatus comprising an environmental system having all of the features of claims 1-3, 13, 15, 37-38 and 41-42, which render these claims not novel.

As claims 1-3, 13, 15, 37, 38, 41 and 42 are not novel as discussed above, it follows that these claims also lack an inventive step.

Industrial Applicability (IA) claims 1-27, 37-48

The invention defined in the claims is considered to meet the requirements of Industrial Applicability because it can be made by, or used in, industry.

VII. Certain observations on the application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Claims 16 and 43 are not clear because there is no antecedent to *the device table* (line 8 in both claims).
The same objection applies to claim 39.
2. It is noted that in claim 14, *the same plane as a device exposes a surface of the device* should be replaced by *the same plane as a device exposed surface*.

- ☒ The claimed invention is patentable according to Section 13(2); or
- ☐ The claimed invention is unpatentable according to Section 13(2) because: